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EXAMINER	
MOE, AUNG SOE	
ART UNIT	**PAPER NUMBER**
2685	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/325,431	MASAAKI ET AL.	
	Examiner	Art Unit	
	Aung S. Moe	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12 and 14-42* is/are pending in the application.

4a) Of the above claim(s) *2,4,16,17 and 19-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-10,12,14, 15,18 and 23-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3, 5-10, 12, 14-15, 18, 23-38 and 39-42 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 3, 5-6, 7, 9-10, 12, 14-15, 18, 23-26, 28 and 39 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (Translation of JP 64-007792) in view of Iwashita et al. (U.S. 4,427,280), Vockenhuber (U.S. 4,148,072) and Ishikawa et al. (U.S. 6,549,650).

Regarding claim 1, Yamaguchi '792 discloses an image-capturing apparatus (i.e., Fig. 1; noted the image-capturing apparatus 12/15), comprising: a first image-capturing unit having a first image-capturing optical system (i.e., noted the camera 12 of Fig. 1); and a second image-capturing unit having a second image-capturing optical system (i.e., noted the camera 15 as shown in Fig. 1), the second image-capturing unit being detachably connected to the first image-capturing unit (i.e., noted that the camera 12 and 15 can be detachably connected via the elements' 16 and 13; see Figs. 1 and 2); wherein the first image-capturing unit is an electronic camera (i.e., noted that both cameras 12 and 15 are an electronic camera), said first image-capturing unit (i.e., the Camera 12 as shown in Fig. 1) comprising: joint hole (i.e., noted the element 104 of camera 12 as shown in Fig. 1) for connecting with joint (i.e., the element 16 of the camera 15) of the second image-capturing unit (15), and an interface for transmitting data between the first image-capturing unit and the second image-capturing unit (i.e., noted the multi-connectors 17/18 as an interface for transmitting data between the camera units 12 and 15; see Fig. 2 of Yamaguchi '792), wherein said first and second image-capturing units (12, 15) cooperatively provide **at least one of** a panoramic imaging mode and a three-dimensional imaging mode (i.e., note the stereoscopic image pickup mode when the cameras 12 and 15 are connected as a single unit; see the abstract and page 8 of the Translation) when operative connected in the multi-lens mode (i.e., when the cameras 12 and 15 are connected to formed as a

multi-lens mode); and wherein full image data from both first and second image-capturing units (12, 15) are captured simultaneously (i.e., noted form Figs. 2 and 3, it is noted that the camera 12 and 15 is capable of capturing the R1 full image data and L1 full image data at the same time) while in the multi-lens camera mode.

Furthermore, it is noted that Yamaguchi '792 show the use of single joint/hole for connecting the first and second image-capturing units, and doe not explicitly show the use of multiple join holes for connecting with joints of the second image-capture unit as claimed. However, when the use of multiple joint holes in the camera body for connecting with the joints portion of another external device is well known in the art as evidenced by Iwashita '280. In particular, Iwashita '280 teaches the use of joint holes (i.e., noted the holes 2-4 of the camera 1 as shown in Fig. 4) for connecting with joints (i.e. the joints elements 8-10) of the external unit.

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide the joint holes on the body of camera units 12 and further providing the joints on the second camera unit (15) of Yamaguchi '792, so that it would allow the user to easily and conveniently connect the camera unit (12) with the second camera unit (15) by just aligning the joint holes of the camera unit (12) with the joints of the camera unit (15) as suggested by Iwashita '280 (i.e., col. 2, lines 25+ of Iwashita '280).

Moreover, it is noted that Yamaguchi '792 does not explicitly show the use of zoom lens in the first and second image-capturing units, and a lens controller driving the zoom lenses of the first and second image-capturing optical systems to equalize zooming magnifications of the first and second image-capturing optical systems as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Vockenhuber '072. In particular, Vockenhuber '072 teaches the use of the first and second image-capturing optical systems comprising a zoom leans (i.e., noted the zoom lenses 27/24 and 36/23 of the first and second cameras as shown in Fig. 1; col. 3, lines 3+), and a lens controller for driving the zoom lenses of the first and second image-capturing optical systems to equalized zooming magnification of the first and second image-capturing optical system (i.e., col. 3, lines 50-56).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Vockenhuber '072, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Vockenhuber '072, since Vockenhuber '072 stated at col. 1, lines 65+ that such a modification would provide a good quality picture on the reproducing device when focusing of the same object by the cameras.

Further, it is noted that Yamaguchi '792 does not explicitly show that the simultaneously captured image data by the first and second image-capturing units are stored as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 clearly teaches that it is well known in the art to simultaneously captured the full image data from both the first and second image-capturing units (i.e., see Figs. 24-25; noted the CCD sensor 1020 and 1200) and the simultaneously captured image data are stored (i.e., noted the use of process memory as shown in Fig. 25; see col. 27, line 55- col. 28, lines 10) while in the multi-lens camera mode (noted the use

of multi-lens camera 1002/1003 to captured panoramic/stereoscopic operation mode; see col. 26, lines 30+ of Ishikawa '650).

Therefore, having the system of Yamaguchi '792 and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting (i.e., overlapping amount between right and left images) the image signal levels of the first camera and the second camera.

Regarding claim 3, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses a connection detector for detecting the first image-capturing unit is connected to at least the second image-capturing unit (i.e., as shown in Fig. 2 of Yamaguchi '792, it is noted that with the use of connection terminals 17a/18a, the controller 19 of the camera is capable of detecting the presence of an external video input connected to the video input terminal of the first camera 12, and supplies control signals to switching circuit 20 based on the detection of second camera unit 15 to the first camera unit 12; see page 8 of the translation portion of Yamaguchi '792); and

a controller for synchronizing or interlocking image-capturing operation of the first image-capturing unit and at least the second image-capturing unit (i.e., noted that when the camera 15 is connected to the camera 12, the controller devices 19/20 of the camera 12 is capable of interlocking image-capturing operation of the camera 12 and 15 by synchronizing the image capturing process of the camera 12 with the camera 15 as discussed in page 8+ of Yamaguchi '792; also see Figs. 2 and 3 of Yamaguchi '792).

Regarding claim 5, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses wherein each of the first image-capturing unit has a power source (i.e., noted that the camera 12 of Yamaguchi '792 must contains a power sources to operate the camera 12, thus, the power sources is inherent feature of the camera unit 12 of Yamaguchi '792).

Moreover, it is noted that Yamaguchi '792 does not explicitly show whether or not the second camera 15 contains a power source of its own. However, Vockenhuber '072 teaches that the camera 1 and 4 can be operated independently and each camera units contains its own power source (i.e., it is also noted that two TV cameras 4 can be detachably attached one another and independently operated by itself, thus, each TV camera 4 contains its own power sources; see col. 3, lines 25-30, col. 4, lines 1+ and col. 7, line5-10 of Vockenhuber '072), in view of this, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a power source to a second camera unit 15 of Yamaguchi '792 as taught by Vockenhuber '072, so that the camera unit 15 of Yamaguchi '792 can be used independently when it's not connected to the first camera 12, thereby functionality of camera system of Yamaguchi '792 can be obviously enhanced.

Regarding claim 6, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses a power-supplying device for supplying power from a power source of the first image-capturing unit to at least the second image-capturing unit (i.e., as shown in Fig. 1 of Yamaguchi '792, the driving function of the second camera is controlled by the first camera 12, thus, it is cleared that the first camera 12 is supplying power to the second camera unit 15).

Regarding claim 7, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses wherein the second image-capturing unit records an image at the same time as the first image-capturing unit does in synchronism with an image recording start signal outputted from the first image-capturing unit (i.e., noted from Fig. 3 of Yamaguchi '792 that the image captured by the camera 12 and the camera 15 are in synchronism with each other based on the image-capturing start signal "f" of the camera 12 generated by the drive controller 19; see first line of page 9 of the JP translation).

Regarding claim 9, the combination of Yamaguchi '792, Iwashita '280, and Vockenhuber '072 does not explicitly shown the use of at least one of: AE, AWB or AF devices in the first image capturing unit for automatically controlling at least one of the exposure, the white balance and the focal point in accordance with said at least one of AE value, the AWB value and the AF value obtained by the first image-capturing unit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches wherein the first image-capturing unit comprises **at least one of**: an AE device for measuring an AE value for controlling automatic exposure; an AWB device for measuring an AWB value for automatically controlling white balance; and an AF device for measuring an AF value for automatically controlling a focal point (i.e., noted that the camera signal processing unit 95 as shown in Fig. 14 of Ishikawa '650 contains an AF, AE and AWB circuit; see col. 20, lines 5+); wherein the first image-capturing unit automatically controls **at least one of** the exposure, the white balance and the focal point in accordance with said at least one of AE value, the AWB value and the AF

value obtained by the first image-capturing unit (i.e., see Fig. 14, and col. 20, lines 5-55 of Yamaguchi '792).

In view of the above, having the system of Yamaguchi '792 and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 as taught by Ishikawa '650, since Ishikawa '650 stated at col. 20, lines 45+ and col. 21, lines 50+ that such a modification would provide a good quality three-dimensional image signal on the stereoscopic display by adjusting the image signal levels of the two-dimensional image signal.

Regarding claim 10, the combination of Yamaguchi '792, Iwashita '280, and Vockenhuber '072 does not explicitly shown the use of at least one of: AE, AWB or AF devices in the second image capturing unit, wherein the first image-capturing unit and the second image-capturing unit share measuring operations and measured results as recited in present claimed invention.

However, as discussed for claim 9 as above, using at least one of AF, AE and AWB device in the second image-capturing unit is well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches wherein the second image-capturing unit (i.e., as shown in Figs. 11 and 14, the CCD unit 103 for capturing the either L/R images is considered as an image-capturing unit) comprises at **least one of**: an AE device for controlling automatic exposure; an AWB device for measuring an AWB value for automatically controlling white balance; and an AF device for measuring an AF value for automatically controlling a focal point (i.e., noted that the camera signal processing unit 95 as shown in Fig. 14 of Ishikawa '650

contains an AF, AE and AWB circuit; see col. 20, lines 5+); wherein the first image-capturing unit (i.e., noted the elements 2a/103a of Figs. 11 and 14) and the second image-capturing unit (i.e., noted the elements 2b/103b of Figs. 11 and 14) share measuring operations and measured results (i.e., as shown in Fig. 14 of Ishikawa '650, the signal processing unit 95 is shared for both CCD units 103a/103b).

In view of the above, having the system of Yamaguchi '792 and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 as taught by Ishikawa '650, since Ishikawa '650 stated at col. 20, lines 45+ and col. 21, lines 50+ that such a modification would provide a good quality three-dimensional image signal on the stereoscopic display by adjusting the image signal levels of the two-dimensional image signal.

Regarding claim 12, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses wherein each of the first and second image-capturing optical systems comprises a non-contact communication device for transmitting information between the first image-capturing unit (the element 4 of Vockenhuber '072) and the second image-capturing unit (the element 1 of Vockenhuber '072) by using electromagnetic waves (i.e., see col. 6, lines 55+ of Vockenhuber '072).

Regarding claim 14, the combination of Yamaguchi '792, Iwashita '280, and Vockenhuber '072 does not explicitly show wherein an external storage device is detachably attached to the electronic camera through a slot.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches the use of external recording

medium (2006) for detachably attaching the electronic camera through a slot (i.e., as shown in Fig. 25 of Ishikawa '650, the recording medium 2006 can be detachably connected to the connection slot 207 of the camera).

In view of the above, having the system of Yamaguchi '792 and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 as taught by Ishikawa '650 so that more image can be recorded by the camera by replacing with a new recording medium every time the recording medium is determined to be fully used.

Regarding claim 15, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses the image-capturing unit comprising: an imaging part including an imaging device for converting a light from a subject into an electric signal, the imaging part being constructed in the same manner as the image-capturing optical system loaded in the electronic camera (i.e., noted the camera 12 and 15 of Yamaguchi '792 provide an image signal as shown in Fig. 3, which are converted electrical signal; also noted the image signals provided by the CCD 92 as shown in Fig. 14 of Ishikawa '650); a joint capable of jointing with the connecting part of the electronic camera(i.e., noted from the Fig. 1 of Yamaguchi '792 that the connector 13 of the camera 12 is function as a joint for jointing the connecting part 16 of the camera 15); and a second information transmission part connectable with the information transmission part of the electronic camera (i.e., noted that each camera 12 and 15 of Yamaguchi '792 contain a corresponding information transmission parts, such that elements 17 and 18 as shown in Fig. 2).

Regarding claim 18, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 discloses wherein each of the first and second image-capturing units comprises an imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image (i.e., noted the camera 12 and 15 of Yamaguchi '792 provide an image signal as shown in Fig. 3, which are converted electrical signal; also noted the image signals provided by the CCD 92 as shown in Fig. 14 of Ishikawa '650).

Regarding claim 23, it is noted that Yamaguchi '792 does not explicitly show the use of a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit (i.e., see Fig. 25; Noted the AGC circuits 1021/1201 and the TG 1025), so that the image signal levels generated by the left camera (1020) and the right camera (1200) may be synchronously adjusted to provide a good stereoscopic view (i.e., see col. 27, lines 55+ and col. 29, lines 40+).

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the image signal levels of the first camera (1020) and the second camera (1200).

Regarding claim 24, although combination of Yamaguchi '792, Iwashita '280 and Vockenhuber '072 show the use of display device (Figs. 3 and 4, the element 65 of Vockenhuber '072) for displaying the image signal captured by the first and the second camera, the combination of Yamaguchi '792, Iwashita '280 and Vockenhuber '072 does not explicitly show an image display having a parallax barrier displaying layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a parallax barrier display layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately (i.e., Fig. 10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+); and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of

being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed (i.e., Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+) as recited in the present claimed invention.

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the parallax of the principal object in the images.

Regarding claim 25, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 shows wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image (i.e. It is noted that Vockenhuber '072 shows the first and second image-capturing units at different focal positions and Ishikawa '650 teaches that the images are combined to compose an image that is focused over the whole image, thus, the claimed limitations of the present claimed invention is considered obvious over the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 for the same reasons as discussed above; see Figs. 3 and col. 5, lines 40+ of Vockenhuber '072; Figs. 21B, 50 and 51 of Vockenhuber '072).

Regarding claim 26, it is noted that although the combination of Yamaguchi '792, Iwashita '280 and Vockenhuber '072 does not disclose all the limitations as recited in the claim 26, such limitations are well known in the art as evidenced by Ishikawa '650. In particular,

Ishikawa '650 teaches wherein depth distribution information is extracted form the images captured by the first and second image-capturing units to perform special effects (i.e., a stereophonic effect) for areas that are not at a predetermined image-capturing distance (i.e., col. 41, lines 45+, col. 42, lines 10+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view thereof.

Regarding claim 28, although the combination of Yamaguchi '792, Iwashita '280 and Vockenhuber '072 does not explicitly show the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file a file manager automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted from the teaching of Ishikawa '650 that the image files recorded in memory 41 are managed by the controller 40 and the CPU 37 accordingly; see col. 18, lines 5+ of Ishikawa '650), in an image file and automatically given a file name to the

image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded (i.e., see col. 18, lines 5+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated in col. 18, lines 20+ that such a modification would easily reproduced the sensed three-dimensional image signal without requiring any dedicated equipment.

Regarding claims 39, the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 teaches wherein in the panoramic imaging mode, an optical axis of the second image-capturing unit is inclined outside of an optical axis of the first image-capturing unit (i.e., noted the teaching of Ishikawa '650 as shown in Figs. 3, 6 and 7B of Ishikawa '650).

Regarding claim 40, it is noted that the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 clearly teaches that it is conventionally well known to use both first and second image-capturing units (i.e., noted the two camera units as used in combination of Yamaguchi '792 and Ishikawa '650) to provide both the panoramic imaging mode and the three dimensional imaging mode (i.e., noted the teaching of both panoramic/three-dimensional imaging mode as discussed in col. 15, lines 35+ of Ishikawa '650) when operative in the multi-lens camera mode (i.e., noted from both Yamaguchi '792 and Ishikawa '650, the first and second camera system is capable of operating in the multi-lens camera mode as required by the present claimed invention).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Iwashita '280, Vockenhuber '072 and Ishikawa '650 as applied to claims discussed above, and further in view of Kaneko (U.S. 4,920,371).

Regarding claim 8, it is noted that the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 does not explicitly stated that an image capture timing of the second image-capturing unit is offset from a reference image capturing timing of the first image-capturing unit by a predetermined time to thereby continuously capture images with the first and second image-capturing units.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Kaneko '371. In particular, Kaneko '371 teaches that it is conventionally known to offset the image capture timing of the second image-capturing unit from a reference image capturing timing of the first image-capturing unit by a predetermined time to thereby continuously capture images with the first and second image-capturing units (i.e., noted from Figs. 3 and 5, the timing of the camera 1 is offset from a reference image capturing timing of the camera 2 by a predetermined time, e.g., the times t1-t5, thereby continuously capture images with the first and second camera units; see col. 3, lines 20+, col. 7, lines 5+).

In view of this, having the system of **Yamaguchi '792** and then given the well established teaching of Kaneko '371, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Kaneko '371, since Kaneko '371 stated at col. 1, lines 60+ and col. 2, lines 15+ that such a modification would allow photographing operation of the first camera unit and the second camera unit at the same timing synchronously with the strobe light emission device.

4. Claims 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Iwashita '280,Vockenhuber '072 and Ishikawa '650 as applied to claims discussed above, and further in view of Fellegara et al. (U.S. 6,441,854).

Regarding claim 27, although the combination of Yamaguchi '792, Iwashita '280,Vockenhuber '072 and Ishikawa '650 shows the use of display device (i.e., noted the LCD 1004 of the camera as shown in Fig. 25 and col. 28, lines 30-35 of Ishikawa '650) for the image-capturing unit and the different external units may be connected the image-capturing unit, such as the electronic camera (i.e., the camera 15 of Yamaguchi '792), the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 does not explicitly show a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

However, it is conventionally well-known in the art to use a display for displaying the storage/memory condition, such as the number of possible shots, of the camera device as taught by Fellegara '854 (i.e., see noted the LCD 22 of the camera as shown in Fig. 3). In particular, Fellegara '854 teaches that when the camera having first and second image-capturing devices (i.e., Noted from Fig. 6 that the camera 10 comprises the first image-capturing device 70 and the second capturing device 60) and the display device 22 of the image-capturing device is capable of displaying a number of possible shots according to the first and second image-capturing units (i.e., col. 4, lines 40+ and col. 9, lines 45+).

In view of this, having the system as shown by the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 having a display (i.e., i.e., noted the LCD 1004 of the camera as shown in Fig. 25 and col. 28, lines 30-35 of Ishikawa '650) and wherein

different number of device may be connected to the camera system (i.e., see Fig. 1 of Yamaguchi '792) and then given the well-established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 by providing a display device capable of displaying the storage condition of the different image capturing devices (i.e., storage condition of the digital camera and the film camera) as taught by Fellegara '854, so that it would obviously enhance the user's convenient by allowing the user to determine the condition of the storage medium before capturing the images, thereby effective memory usage may be realized.

Regarding claim 29, although the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 shows a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the separate image files (i.e., see col. 18, lines 5+ of Ishikawa '650 for well known file management process of the camera unit), the combination of Yamaguchi '792, Iwashita '280, Vockenhuber '072 and Ishikawa '650 does not explicitly show the file names indicating that the separate image files are related to one another.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in separate image files and automatically giving file names to the separate image files (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+), the file names indicating that the separate image files are related to

one another (i.e., noted that based on the ID, IIF and IDF file names are used to indicate relation of the separate image files; see col. 17, lines 1+ and col. 19, lines 5+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Fellegara '854, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

5. Claims 30-35, 37 and 41-42 are rejected under 35 U.S.C. 103(a) as being Yamaguchi (Translation of JP 64-007792) in view of **Ishikawa et al. (U.S. 6,549,650)**.

Regarding claim 30, Yamaguchi '792 discloses an image-capturing apparatus (i.e., see Fig. 1), comprising: a first image-capturing unit (11) having a first image-capturing optical system (i.e., the first camera 12 contains a lens; see Fig. 1); and a second image-capturing unit having a second image-capturing optical system (i.e., the second camera 15 contains a lens; see Fig. 1), the second image-capturing unit being detachably connected to the first image-capturing unit (i.e., noted from Fig. 1 that the camera 15 is detachably connected to the camera 12; see page 6 and 7 of Translation); wherein the second image-capturing unit (15) is connected with the first image-capturing unit (i.e., the camera 12; see Fig. 1), so that the first image-capturing unit (12) and the second image-capturing unit (i.e., the cameras 12 and 15) are controlled in accordance with image information (i.e., as shown in Figs. 2 and 3, when the cameras 12 and 15 are mounted to generated a stereoscopic image, the drive unit 19 supplies control signals to

circuit 20 to control the L and R image information obtained by the camera 12 and 15 respectively) obtained by the first image-capturing unit and the second image-capturing unit (i.e., see page 8 and 9 of Translation); wherein the first image-capturing unit (12) having a first connecting part (13) that mechanically and directly connects a second connecting part (16) of the second image-capturing unit (15) so as to form a single unit (i.e., see Figs. 1; see page 6 of Translation), wherein said first and second image-capturing units (12, 15) cooperatively provide **at least one of** a panoramic imaging mode and a three-dimensional imaging mode (i.e., note the stereoscopic image pickup mode when the cameras 12 and 15 are connected as a single unit; see the abstract and page 8 of the Translation) when operative connected in the multi-lens mode (i.e., when the cameras 12 and 15 are connected to formed as a multi-lens mode); and wherein full image data from both first and second image-capturing units (12, 15) are captured simultaneously (i.e., noted form Figs. 2 and 3, it is noted that the camera 12 and 15 is capable of capturing the R1 full image data and L1 full image data at the same time) while in the multi-lens camera mode.

Further, it is noted that Yamaguchi '792 does not explicitly show that the simultaneously captured image data by the first and second image-capturing units are stored as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 clearly teaches that it is well known in the art to simultaneously captured the full image data from both the first and second image-capturing units (i.e., see Figs. 24-25; noted the CCD sensor 1020 and 1200) and the simultaneously captured image data are stored (i.e., noted the use of process memory as shown in

Fig. 25; see col. 27, line 55- col. 28, lines 10) while in the multi-lens camera mode (noted the use of multi-lens camera 1002/1003 to captured panoramic/stereoscopic operation mode; see col. 26, lines 30+ of Ishikawa '650).

Therefore, having the system of Yamaguchi '792 and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting (i.e., overlapping amount between right and left images) the image signal levels of the first camera and the second camera.

Regarding claim 31, Yamaguchi '792 discloses wherein each of the first and second image-capturing units comprises an imaging device for converting a light from a subject into an electric signal, and captures an image as an electronic image (i.e., noted that the cameras 12 and 15 contains an imaging device which is capable of capturing the electronic image; see page 3, 8 and 9 of Translation).

Regarding claim 32, it is noted that Yamaguchi '792 does not explicitly show the use of a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a gain adjuster for adjusting a gain of a video signal to equalize a video signal level of the second image-capturing unit to a video signal level of the first image-capturing unit (i.e., see Fig. 25; Noted the AGC circuits 1021/1201 and the TG 1025), so that the image signal levels

generated by the left camera (1020) and the right camera (1200) may be synchronously adjusted to provide a good stereoscopic view (i.e., see col. 27, lines 55+ and col. 29, lines 40+).

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the image signal levels of the first camera (1020) and the second camera (1200).

Regarding claim 33, Yamaguchi '792 does not explicitly show an image display having a parallax barrier displaying layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately; and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed as recited in the present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches that it is conventionally well-known to use a parallax barrier display layer on a display plane, the parallax barrier display layer displaying a parallax barrier having a pattern in which light transmissible parts and light shielding parts are arranged alternately (i.e., Fig. 10B; col. 2, lines 35+, col. 5, lines 50+, and col.

17, lines 30+); and a signal processor for displaying, on the image display means, one of an image pattern in which strip-shaped image fragments representing a left-eye image and a right-eye image are arranged alternately, and an image pattern in which strip-shipped image fragments representing a plurality of images are arranged in order; wherein one of an image capable of being seen three-dimensionally and an image capable of being seen differently according to viewing directions is displayed (i.e., Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+) as recited in the present claimed invention.

Therefore, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view by adjusting the parallax of the principal object in the images.

Regarding claim 34, the combination of Yamaguchi '792 and Ishikawa '650 shows wherein the first and second image-capturing units capture images at different focal positions, and focused areas in the images are combined to compose an image that is focused over the whole image (i.e. It is obvious form Fig. 1 of Yamaguchi '792, that the first and second image-capturing units 12 and 15 are at different focal positions and Ishikawa '650 teaches that the images are combined to compose an image that is focused over the whole image, thus, the claimed limitations of the present claimed invention is considered obvious over the combination of Yamaguchi '792 and Ishikawa '650 for the same reasons as discussed above; see Fig. 1 of

Yamaguchi '792; Figs. 8C and 10A-10B; col. 2, lines 35+, col. 5, lines 50+, and col. 17, lines 30+ of Ishikawa '650).

Regarding claim 35, it is noted that Yamaguchi '792 discloses that the first and second camera (12, 15) units perform special effects (i.e., the Stereoscopic effect), and does not explicitly show depth distribution information which is extract from the captured images to perform special effects for areas that are not at a predetermined image-capturing distance. However, such features are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches wherein depth distribution information is extracted form the images captured by the first and second image-capturing units to perform special effects (i.e., a stereophonic effect) for areas that are not at a predetermined image-capturing distance (i.e., col. 41, lines 45+, col. 42, lines 10+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated at col. 9, lines 45+ and col. 29, lines 40++ that such a modification would provide a good stereoscopic view thereof.

Regarding claim 37, the combination of Yamaguchi '792 does not explicitly show a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in an image file and automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ishikawa '650. In particular, Ishikawa '650 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted from the teaching of Ishikawa '650 that the image files recorded in memory 41 are managed by the controller 40 and the CPU 37 accordingly; see col. 18, lines 5+ of Ishikawa '650), in an image file and automatically given a file name to the image file, the file name being distinguishable from a file name of an image file in which one piece of image data is recorded (i.e., see col. 18, lines 5+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Ishikawa '650, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Ishikawa '650, since Ishikawa '650 stated in col. 18, lines 20+ that such a modification would easily reproduced the sensed three-dimensional image signal without requiring any dedicated equipment.

Regarding claims 41, the combination of Yamaguchi '792 and Ishikawa '650 discloses wherein in the panoramic imaging mode, an optical axis of the second image-capturing unit is inclined outside of an optical axis of the first image-capturing unit (i.e., noted the teaching of Ishikawa '650 as shown in Figs. 3, 6 and 7B of Ishikawa '650).

Regarding claim 42, it is noted that the combination of Yamaguchi '792 and Ishikawa '650 clearly teaches that it is conventionally well known to use both first and second image-capturing units (i.e., noted the two camera units as used in combination of Yamaguchi '792 and

Ishikawa '650) to provide both the panoramic imaging mode and the three dimensional imaging mode (i.e., noted the teaching of both panoramic/three-dimensional imaging mode as discussed in col. 15, lines 35+ of Ishikawa '650) when operative in the multi-lens camera mode (i.e., noted from both Yamaguchi '792 and Ishikawa '650, the first and second camera system is capable of operating in the multi-lens camera mode as required by the present claimed invention).

6. Claims 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi '792 in view of Ishikawa '650 as discussed and further in view of Fellegara et al. (U.S. 6,441,854).

Regarding claim 36, the combination of Yamaguchi '792 and Ishikawa '650 does not explicitly show a shot number display for displaying a number of possible shots according to a number of connected image-capturing units.

However, it is conventionally well-known in the art to use a display for displaying the storage/memory condition, such as the number of possible shots, of the camera device as taught by Fellegara '854 (i.e., see noted the LCD 22 of the camera as shown in Fig. 3). In particular, Fellegara '854 teaches that when the camera having first and second image-capturing devices (i.e., Noted from Fig. 6 that the camera 10 comprises the first image-capturing device 70 and the second capturing device 60) and the display device 22 of the image-capturing device is capable of displaying a number of possible shots according to the first and second image-capturing units (i.e., col. 4, lines 40+ and col. 9, lines 45+).

In view of this, having the system of Yamaguchi '792 and then given the well-established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Yamaguchi '792 by providing a display device capable of displaying the storage condition of the different image capturing devices (i.e., storage condition of the digital camera and the film camera) as taught by Fellegara '854, so that it would obviously enhance the user's convenient by allowing the user to determine the condition of the storage medium before capturing the images, thereby effective memory usage may be realized.

Regarding claim 38, although the combination of Yamaguchi '792 and Ishikawa '650 shows a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously, in separate image files and automatically giving file names to the separate image files (i.e., see col. 18, lines 5+ of Ishikawa '650 for well known file management process of the camera unit), the combination of Yamaguchi '792 and Ishikawa '650 does not explicitly show the file names indicating that the separate image files are related to one another.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Fellegara '854. In particular, Fellegara '854 teaches the use of a file manager for recording a sequence of image data, captured by the first and second image-capturing units simultaneously or continuously (i.e., noted the controller 120 for managing the image information captured by the digital and film camera thereof; see Fig. 6), in separate image files and automatically giving file names to the separate image files (i.e., Figs. 7 & 14; col. 8, lines 50+ and col. 16, lines 15+), the file names indicating that the separate image files are related to

one another (i.e., noted that based on the ID, IIF and IDF file names are used to indicate relation of the separate image files; see col. 17, lines 1+ and col. 19, lines 5+).

In view of the above, having the system of **Yamaguchi '792** and then given the well established teaching of Fellegara '854, it would have obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of **Yamaguchi '792** as taught by Fellegara '854, so that it would obviously provide the quick image review of the different images stored in the storage medium, since the image files are easily distinguishable from the corresponding given file name as taught by Fellegara '854.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 571-272-7314. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Aung S. Moe
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A. Moe
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